

## ABSTRACT OF THE DISCLOSURE

A communication system, in which bit loading and power allocation are addressed, transfers data between a transmitter and a receiver over a plurality of channels. The system comprises modulation circuitry having a plurality of different modulation alphabets thereby providing a set of possible bit loading sequences. The system also has circuitry for determining the power to be allocated for each bit loading sequence based on minimizing the error rate and circuitry for selecting the bit loading sequence with the lowest error rate.